Trenchless Foundation Course in Microtunneling

Program Conducted By:

Indian Society for Trenchless Technology (IndSTT)

HR IN TRENCHLESS TECHNOLOGY

The Human Resource in Trenchless Technology Industry, due to its professional nature and specialization, is the most crucial aspect of any Trenchless construction or rehabilitation activities. Till date, the Global Trenchless industry has this resource developed through actual hands-on activities assisted by partial or informal academia-designers-manufacturers interactions, essential lectures and trainings. With the limited number of projects in the past, such human resources were able to meet the project demands but with the advent of major construction and rehabilitation projects in Indian Trenchless Sector, the present strength is getting completely overwhelmed leading to either untrained persons being put on the projects or the project delays beyond acceptable limits. Though a formal education system to develop Trenchless Technologists, by IndSTT jointly with Assam University, is already underway, looking at the market requirements the need today is to accelerate the HR development process. In this direction IndSTT is now initiating fast track Trenchless Professional courses in various Trenchless Technology techniques titled **Trenchless Foundation Program**. Proceeding sections discusses the program and invites the stakeholders to join the initiative.#

TRENCHLESS FOUNDATION PROGRAM - MICROTUNNELING

Introduction

Trenchless Foundation-Microtunneling is a program developed for providing the founding knowledge of essential topics required for Microtunneling Technique. The program is structured to assist the trainee in the successful execution of Microtunneling project Design & Construction. Working experience backed with the knowledge acquired through this program shall be quite useful to the practicing Trenchless Professional in becoming self reliant in the selected sphere of technology application. This program will also provide the much required technical inputs to the new entrants and other engineering fraternity members interested in various issues related to Microtunneling Projects.

Program overview

The course comprises of 12 different modules on various topics of Microtunneling Technology. Module contents have been developed through extensive research of technical books, documents, research and project reports, and other relevant sources, and evaluated on sound engineering practices. Upon conclusion of this course the trainee shall have the training of basic issues of Microtunneling technique & would be expected to be capable conducting regular Microtunneling operations. Details about the courses modules are provided later. The course is designed for working professionals and the schedule is also detailed hereafter.

COURSE COVERAGE

Trenchless Foundation-Microtunneling Program has been divided in three levels, **Basic, Intermediate & Advanced**. Course coverage of each level is as follows:

- **Basic Course**—It covers Basic of Microtunneling Methods, Survey and Investigation for Microtunneling Projects, Drilling fluids & Subsurface Utility Engineering.
- **Intermediate Course**—It covers Microtunneling Operations, Equipment Selection for Microtunneling Projects, Project Design for Microtunneling Projects and Site Supervision for Microtunneling Projects.

- **Advanced Course—**It Covers Jacking and Receiving Shaft, Laser Guidance System/Laser and Jacking Frame Setup, Jacking Pipe Design, Shaft Design and Pricing and Cost Control.

Basic Level Course Contents

Module No.	Module Name
1	Basic of Microtunneling Methods
2	Survey and Investigation for Microtunneling Projects
3	Drilling Fluids
4	Subsurface Utility Engineering

- **Basic of Microtunneling Methods** - Description of microtunneling methods, technique background, spoil removal and line & grade management.#
- **Survey and Investigation for Microtunneling Projects** - Basic Consideration for carrying out survey and geotechnical investigation, data interpretation evaluation and planning of the project including mapping and subsurface exploration.
- **Drilling Fluids** - Introduction of drilling fluids, development of technology, equipment and procedures1
- **Subsurface Utility Engineering** - Introduction, components, site assessment, data management and conclusion for microtunneling project execution.

Course Eligibility

Diploma in Engineering with 2 years experience or Degree in any branch of Engineering.

Module No.	Module Name
1	Microtunneling Operation
2	Equipment Selection
3	Project Design for Microtunneling Project
4	Site Supervision for Microtunneling Projects

Intermediate Level Course Contents

- **Microtunneling Operation** - Machine set up, Jacking and receiving shaft, Jacking operation, and Slurry removal.
- **Equipment Selection** - It covers the guidelines that need to be followed in making choice of the machine and their attachments. The equipment also needs to perform at its best.
- **Project Design for Microtunneling Projects** - Alignment considerations, cover requirements, design grade, product pipe requirements, casing requirements, line and grade tolerance.

- **Site Supervision for Microtunneling Projects** - Construction monitoring requirements relative to microtunneling including job site safety, pre-construction surveys, pipe materials testing, microtunneling operations and instrumentation provisions.

Course Eligibility

Successful completion of Microtunneling Basic Foundation Course.

Advanced Level Course Contents

Module No.	Module Name
1	Jacking and Receiving Shaft
2	Laser Guidance System / Laser and Jacking Frame Set Up
3	Jacking Pipe Design, Shaft Design
4	Pricing and Cost Control

- **Jacking and Receiving Shaft** - Design of launching and receiving shaft, thrust wall, ground condition and jacking frame set up#

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- **Laser Guidance System / Laser and Jacking Frame Set up** - Fitting the laser guidance system, laser cheeks, steering setting laser beam with directional setting into the axis etc.#

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- **Jacking Pipe Design, Shaft Design** - General methodology of pipe design and about RCC pipes with or without lining, steel pipes, polycrete pipe.

- **Pricing and Cost Control** - Various inputs to complete the cost estimate, production rate depending on ground condition and other factors that will influence the cost.

Course Eligibility

Successful completion of Microtunneling Intermediate Foundation Course.

Batch Strength

- Maximum batch strength shall be 35 participants.
- Minimum batch strength shall be 10 participants. In case of lesser registrations, the particular batch may be merged with the subsequent batches.

FOR REGISTRATIONS OR FURTHER ENQUIRIES AND DETAILS, PLEASE CONTACT:

Prof. Niranjan Swarup
Executive Director
Indian Society for Trenchless Technology (IndSTT)
908, Hemkunt Chambers, 89, Nehru Place, New Delhi –110019 INDIA
Phone: +91-11-41617862 Fax: +91-11-41617863 Mobile: + 91-9811499248
Email: indstt@indstt.org, indstt@indstt.com
Website: www.indstt.com, www.indstt.org, www.indianodig.com, www.indstt.in